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A History with Web Archives, Not a History of Web Archives: A History of the British Measles-Mumps-Rubella Vaccine Crisis, 1998-2004

Abstract

This chapter details a case study where the British Library's search interface SHINE and the Internet Archive were used as part of a wider documentary history of British vaccination policy since the Second World War. It serves as an example of how social and political historians will increasingly use web archives in their work. Histories of the 1990s and twenty-first century will be impossible without them. However, non-digital historians may lack awareness and skills necessary to make best use of these tools. This case study demonstrates to archivists and platform providers the thinking process used by semi-skilled historians. This may act as a guide to what historians want from digital repositories and how this might be provided. Similarly, it may demonstrate what training and methodological development historians require to produce better histories from web archives.

Key terms

Historiography, policy, vaccination, history of medicine, British

Other terms for indexing

Case study, MMR, political history, social history, 1990s, 2000s, Britain, UK

Biography

Gareth Millward is a Wellcome Trust Research Fellow at the Centre for the History of Medicine, University of Warwick. He held a bursary from the British Library and Institute of Historical Research to help develop new search tools for historians accessing the Library's web archive data in 2014-15. Since then, he has been keen to integrate web archives into his research, particularly for contemporary events. He specialises in British health policy since World War II. His PhD focused on disability policy since the 1960s, and he has recently completed a monograph on the history of British childhood vaccination policy. Since 2017 he has been researching the policy and rhetoric around British sickness certification from 1945 to the present.

A History with Web Archives, Not a History of Web Archives: A History of the British Measles-Mumps-Rubella Vaccine Crisis, 1998-2004

The media storm over the measles-mumps-rubella vaccine (MMR) is often attributed to a now-retracted *Lancet* article from February 1998 (Wakefield et al, 1998). Allegations that the vaccine might be linked to rising autism diagnoses in the United Kingdom caused significant problems for public health authorities. Vaccination rates dropped as parents received conflicting information from the medical profession, the press and, increasingly, the World Wide Web. In England, 92 per cent of children under the age of two received at least one dose of MMR in 1996. In 2004 this had dropped to 80 per cent (Health and Social Care Information Centre, 2005). Although the uptake of MMR then began to recover, it was not until 2012 that rates returned to pre-crisis levels. Conveniently, the Internet Archive begins in 1996, and covers this entire period. Given that the web was often credited as an influence during the crisis, this is a critical resource in writing the history of MMR.

But accessing the archive is no simple task. There is far too much information for any one human to read in detail. Moreover, most historians – even those dealing with the more-recent past – are not trained to use, or have experience using, web archives. Many do not have the resources or the inclination to build their projects around ‘the web’ as their main object of study. With so much information available, how can historians use the archived web as one source among many? How can they select and read documents? And how problematic is this for our understanding of the 1990s and 2000s?

This chapter is a review of one historian's research involving the Internet Archive. Through a case study, it shows historians without experience of web archives what is possible – as well as the methodological pit falls. In doing so, it also emphasizes to digital historians and web archivists how 'traditional' historians with little experience of web archives might approach this source base. This may help to explain what historians will want from digital repositories and what training they may need to physically and practically access them in a meaningful way.

This chapter begins with an outline of the project. Next, it explores the methodological challenges of using the Internet Archive, especially for historians who are using close textual reading of these sources as part of a wider study. After explaining the historical context of MMR and British internet usage, it then outlines three different websites. These do not just give examples of the empirical data gleaned from the archive, but also the methods for identifying and using that material. As a whole, it shows that the Internet Archive can be used as one source among many in larger history projects that span a wider time frame than that in which the web has existed. However, it is still a flawed and problematic process. Historians will be confronted with these problems more regularly over the next few years, and it is important that we begin to tackle them sooner rather than later.

A history of policy

I am a historian of medicine, specializing primarily in the history of government policy. Between 2014 and 2017 I wrote a monograph on the history of British vaccination policy from the 1940s through to MMR in the twenty-first century.¹

The main source base comprised official records (such as reports, internal governmental procedural documents and parliamentary proceedings), contemporary publications and newspapers. Web archives were an important addition to this body of literature. There were websites which were in themselves official government documents. Similarly, websites created by other organizations and individuals inform analysis of how and why the British public may have supported or rejected official government policy. Not all these sites were still on the live web, or at least not in the form they would have taken during the period under discussion. I used the Internet Archive's (2017) Wayback Machine in conjunction with the SHINE interface – a faceted search tool developed on a comprehensive index of the .uk domain by the British Library (2017). These tools allow historians to inspect historical snapshots and contextualize them with other primary sources.

Yet web archives were not (and could not be) central to the overall analysis. The period they cover was limited to the final book chapter on MMR. Any large-scale analysis of hyperlink networks or corpus linguistics was impractical. I lacked the training or expertise to embark on such an endeavour, and in practical terms I lacked the time to do so. It would also have created an

unbalanced project, with completely different historical techniques and research questions employed for around one-fifth of the monograph compared with the other time periods. The aim, therefore, was to integrate archived web sources; albeit with a critical eye on how born-digital sources must be inspected within a different context to other archived materials (Brügger, 2008). This was not a history *of MMR on the web*. Such a project would undoubtedly shed light on the impact of the web just as contemporary sociologists and media studies academics have been invaluable in assessing the impact of the media on public discourse (Hargreaves et al., 2003; Speers and Lewis, 2004). Ackland and Evans (2017) give us an example of how this might be done with another contentious debate of medical and social significance, abortion in Australia. Instead, this was a history of MMR *which included the web*.

While the work of digital historians has been invaluable in opening up these sources to wider historical analysis, it is important that 'traditional' historians are able to work *with* as well as *on* internet archives. Not all research questions will be designed with web archives as the central source. Wider social and political studies will also need to analyse data which are neither born-digital nor originally published on the internet. At the same time, any history of the 1990s and 2000s has to engage with the fact that increasing numbers of Britons were using the web in their day-to-day lives. In order to write such histories, researchers need to be aware of the power as well as the limits of available depositories. The British UK Domain Data for the Arts and Humanities (BUDDAH, 2015) project with the Institute of Historical Research and British

Library (Winters, 2017) revealed that web archival sources are not the same as fully catalogued 'physical' collections such as those at The National Archives or local history centres. Similarly, they are not as accessible, coherent or well-curated as digitized depositories such as the Old Bailey records or newspaper collections.²

As part of BUDDAH, I had done some work on the Internet Archive. I was therefore not a complete novice, though I would also lay no claims to be an accomplished digital historian. The experience from this and from my colleagues showed that naïve search methods could lead to large, unwieldy corpora that were difficult to analyse (see esp. Deswarte, 2015; Millward, 2015). With MMR, I decided to focus on websites which were cited in my other primary sources. Mostly, these were URLs mentioned in correspondence and news reports in the leading medical journals *The Lancet* and the *British Medical Journal*. This produced a concentrated group of documents for which there was evidence of impact in the historical record. Martin Gorsky (2015) employed a similar methodology in his investigation of Primary Care Trust websites from the 1990s and 2000s. Web archives were crucial in these endeavours. The Wayback Machine allowed me to examine captures of websites from the time that they were cited by other publications. The well-known problem of 'link rot' in academic journals (Zittrain et al., 2014) meant that this was also, in many cases, the only way to access any version of URLs long since removed from the live web. This form of triangulation provided richer insight from the primary sources.

The MMR crisis in the context of British 2000s web history

MMR became part of the routine vaccination programme for children in 1988. Immunization rates against the three diseases had been sub-optimal for public health authorities, and this trivalent vaccine was more effective and convenient for parents (Department of Health and Social Security, 1987; Badenoch, 1988). Uptake of the vaccine was good. By 1996 over 90 per cent of children under the age of two had received MMR (Health and Social Care Information Centre, 2005). But confidence in the vaccine dropped significantly in the late 1990s. In 1998, a paper was published in *The Lancet* (Wakefield et al, 1998) which appeared to show a link between MMR and a new type of autism. The paper itself was inconclusive. However, in a press conference called to launch the paper, the lead author, Andrew Wakefield, claimed that it would be safer for parents to give their children separate measles, mumps and rubella vaccines. Despite repeated assertions that there was no evidence of a link between MMR and autism – including in the same edition of *The Lancet* as Wakefield et al's paper (Chen and DeStefano, 1998) – the press continued to report that the medical community was divided on the issue (Speers and Lewis, 2004).

The crisis hit its peak in late 2001 and early 2002 (Speers and Lewis, 2004). Prime Minister Tony Blair refused to confirm or deny whether his own young son Leo had received MMR, citing his right to privacy. Then, a BBC documentary series *Panorama* reported on Wakefield and John O'Leary's work on the MMR-autism link, casting new doubt on the vaccine's safety (Dobson,

2002). The government was forced into a defensive publicity campaign. The Department of Health eventually regained some control over the MMR story. The weight of scientific evidence in MMR's favour meant that the Legal Services Commission (2003) withdrew funding for a case against the Department brought by the parents of autistic children who had received MMR. Then in the following year, the investigative journalist Brian Deer (2004) published a series of exposés on Wakefield's research practices in the *Sunday Times*. Ten of the twelve co-authors of Wakefield et al (1998) formally withdrew their support for the 1998 paper (Murch et al, 2004), and Deer's documentary for the Channel 4 series *Dispatches* (Berger, 2004) further damaged Wakefield's reputation and reaffirmed the scientific basis for the MMR programme. The General Medical Council (2010) began proceedings against Wakefield, and he was eventually struck off the medical register for serious professional misconduct.

There are two main reasons for studying the MMR crisis. For public health professionals and researchers, the period was considered a 'crisis' because the vaccination rate among children for MMR dropped significantly leading to several measles outbreaks, notably in 2008-09 and 2012-13 (Eaton, 2009; McCarthy, 2013; Keenan et al, 2017). They study MMR in its own right or as a comparison with similar events in other countries and time periods to learn lessons and avoid such events in the future. For historians and media studies scholars, the crisis is of interest as an example of a public debate played out in the popular press, doctors' surgeries and the internet (Speers and Lewis, 2004; Horton, 2004; Fitzpatrick, 2004). The media coverage of MMR was bound up in

the political and cultural context of its time, and tells us much about public attitudes towards science, medicine, infectious disease and state authority. Any research questions around these topics must involve the internet. There is a temporal overlap. Although placing exact dates on the MMR crisis is difficult, the most concentrated period of activity is from the publication of Wakefield et al (1998) to the Deer (2004) exposés. A wider view may take in the decline in MMR uptake – 1996 (Health and Social Care Information Centre, 2005) – and present-day measles outbreaks in Europe and North America (Larson et al, 2016). However defined, this is contemporaneous with the holdings in the Internet Archive. Moreover, the internet was continually cited as an influence on the debate.

<INSERT FIGURE 1>

Knowing exactly who and how many people read about MMR on the internet is difficult to know with absolute precision. These questions are currently asked as part of surveys on parents' attitudes and the trend has been towards increased usage, but were not discussed in the peak period of the crisis (Ramsay et al, 2002; Campbell et al. 2017). In a 2003 study (Hargreaves et al, 2003), only 5 per cent of respondents said that they consumed their science news primarily from the internet. Undoubtedly, however, the general trend has been towards increased internet usage and coverage in Britain. This period of greatest growth coincided with the intensification of the MMR crisis (UNdata, 2017). It is therefore understandable that commentators at the time, at least in part,

attributed the spread of rumour and negative publicity over the vaccine to 'the internet' (Selway, 1998; Speers and Lewis, 2004; Horton, 2004).

Web archives can certainly help to uncover these trends, but the definition of 'the internet' in this context has to be challenged. It can refer to the technology itself, the information contained on it or the cultures around how it was used and the meanings attributed to them (Abbate, 2017; Turner 2017). Moreover, the meaning and use of the internet has not been static; nor should we succumb to the temptation of writing either Whiggish narratives of internet 'progression' or uncritical polemics against the 'dangers' of the democratization of knowledge (Russell, 2017). However, this is not a history *of* the Web.

Instead it is one that acknowledges that internet usage and web content at the turn of the millennium was part of the cultural milieu that influenced public discourse about MMR. The focus was on content – on closer reading of the information contained in select webpages – rather than a fully theorized and evidenced analysis of how the internet was used in by different groups. What information was accessible to the general public? How did the government or other authors make use of this emerging technology? And if 'the internet' was to blame, what specific websites or resources on that internet were particularly worrisome or empowering to different communities involved in the crisis? This has necessarily limited the conclusion that one can draw from the material, but has also made the documents easier to integrate into my existing primary source analysis. Historians need to be conscious of their choices and the politics inherent in the definition of 'the internet' that they used. (Abbate, 2017).

With these caveats, this article now presents three examples of how the Internet Archive might be used. The first concerns a government website called MMR The Facts, hosted on the nhs.uk domain. It sought to educate parents about MMR, borrowing from sociological research on risk communication. The government used the web because of the internet's growing importance (perceived or real) and because it could provide as little or as much information as parents or health professionals wished to consume. The second example is a report written by vaccine-sceptic activist Alan Phillips in 1997. This document was hosted as a text file on an American university's server. While the actual impact of the document is difficult to measure, it was quoted by a health worker in the *British Medical Journal* who claimed many parents in his/her circle had read and shared it widely. The final example concerns the website of the Society for the Autistically Handicapped. This was discovered through SHINE. It shows how potentially 'lost' documents can be traced within the archive, albeit with limitations in what historians can then do with this information.

mmrthefacts.nhs.uk

The British government attempted to combat negative publicity about MMR from the day of the infamous Wakefield press conference. In the face of increased doubt and declining vaccination rates, it renewed its campaign in 2001 (Ramsay, 2001). This failed to reverse the trend. In 2002, the Department of Health launched a new public-facing website called MMR The Facts, which it believed would educate parents and make use of an increasingly-important

technology (Department of Health, 2002d). It borrowed from techniques outlined in the growing field of risk communication, amid criticism from sociologists that the Department's strategy had hitherto been too proscriptive and inflexible (Alaszewski and Horlick-Jones, 2003; Ramsay 2002). The site's URL appeared in contemporary news reports, particularly in the *British Medical Journal* (Muminovic, 2002).

The Internet Archive provided an opportunity to analyse what information the Department felt was important and to see whether and how these messages changed over time. The news section, for example, provided regular updates on stories that reaffirmed the government's MMR message (Department of Health 2002c). A world map showed which countries used MMR and the varying rates of infectious disease between them. The Department showed that most high-income nations used the vaccine, emphasizing its safety record – especially in relation to the outbreaks of diseases such as measles in low-income countries. Statistical models showed what could happen if vaccination rates dropped too far. An interactive map allowed users to scan the globe, though unfortunately the Wayback Machine has not preserved this Flash application (Department of Health, 2002e). A 'myths and truths' section refuted the main claims made against MMR, especially the Wakefield et al (1998) article. This quick reference section was supported by a much longer page about MMR, why the government preferred it over other public health measures and the importance of achieving high uptake among the entire population (Department of Health 2002b). Other than the news section, these pages appear to have remained static for the

lifespan of the website. A more dynamic and interactive page came in the form of 'your questions answered'. If parents felt the website did not answer their questions sufficiently, they could complete a webform with a specific question. This was then forwarded to an 'expert' within the Department of Health who would provide an answer. The Wayback Machine has archived 40 of these questions, and they covered a range of topics from specific enquiries about allergies to requests for more empirical data (Department of Health, 2002f).

<INSERT FIGURE 2>

Related to this website was a specific page dedicated to health professionals. Written in a more-technical format, it provided a comprehensive summary of the sort of questions parents were likely to ask and the reasons why the Department believed MMR was still the best course of action for children. While MMR The Facts could perform this role too, this concise, detailed page was held on the Department of Health's (2002a) own domain. The Department felt this necessary because it was clear that health workers were members of the public too. They had also been affected by constant media coverage and were themselves unsure about the precise reasons behind the MMR programme. The official 'Green Book' on vaccination was updated once every few years, but was only available in hard copy and could not adapt quickly to the changing discourse around MMR and vaccine technology.³ General Practitioners and nurses were known to have the greatest impact in educating and changing parents' behaviour. Therefore it was important that information was made

available through the most up-to-date and timely medium (Petrovic et al, 2001; British Medical Journal, 2002).

It is interesting that the sites appear to have been maintained for a relatively short amount of time. After 2004, the copyright information on MMR The Facts was no longer updated; and when the Department of Health's domain changed from 'doh.gov.uk' to 'dh.gov.uk', the MMR briefing page did not migrate with it. It was replaced with a generic 'immunisation' section, with a link to MMR The Facts for anyone who wanted further information (Department of Health, 2004). Triangulating this with other sources, we can begin to answer why this might be so. The core period of press activity over MMR began in 1998 and ended in 2004. By the time of the domain switch, the Department was confident that it had convinced the majority of parents to vaccinate their children. MMR The Facts had served a useful purpose and would continue to do so. However, the remarkable drop off in articles on MMR in *The Lancet*, the *British Medical Journal* and the general press after 2004 (Speers and Lewis, 2004) shows that the government no longer felt the need to publicize MMR's benefits as forcefully to health care professionals. It is through all these sources of information that these archived websites help us to tell the story of the government's education practices during the MMR crisis.

unc.edu/~aphillip/www/vaccine/dvm.txt

While MMR The Facts was the most directly useful website for analysing government policy and educational strategies in the 2000s, the Internet Archive

also retained documents that gave a sense of the vaccine-sceptic material circulating during the crisis. A correspondent to the *British Medical Journal* (Selway, 1998) drew readers' attention to an American report on the dangers of vaccination (Phillips, 1999).⁴ Hosted on a university server and written like an official medical journal article, it had been shared around Selway's non-medical friends. Its impact on the general public is unclear. We only have the author's own claims to its importance from his present-day personal website (Phillips, 2017).⁵ However, as an individual document it can tell us more about anti-vaccination campaigning and its place within the wider history of the movement. Historians of the nineteenth and twentieth centuries have shown that there were multiple objections to vaccination in Britain and other countries (Durbach 2005; Colgrove 2006). Even today, parents have a wide range of beliefs, which are flexible depending on the vaccine in question, attitudes towards infectious disease and trust in medical and state authorities (Larson et al, 2014). By employing the techniques of contemporary scientific literature, Phillips' report shares many characteristics with the pamphleteers of the previous century. Whether or not Phillips himself was influential, this was a good example of the sort of literature that public health workers believed was circulating among parents. There are limits to how far we can generalize about all anti-vaccination literature at this time; but it certainly fits within what else we know about the longer history of the movement.

<INSERT FIGURE 3>

Through triangulation with other sources, Phillips' report also becomes useful as a window onto the attitudes of the general public. Contemporary newspaper reports in the UK may not have cited it, but they amplified similar concerns – such as the claim that safety testing was inadequate, the diseases being prevented were not particularly harmful, or that the authorities might be hiding key evidence of harm (Speers and Lewis, 2004). Many of these were then refuted in the 'myths' section of MMR The Facts (Department of Health, 2002b). Attitudinal surveys from the early 2000s show that these concerns were present, even if not all parents fully believed them (Hargreaves et al, 2003; Evans et al, 2001). Other health crises from the late twentieth century had reduced faith in medical authorities, meaning that these concerns about MMR had become more believable. The most prominent of these was the bovine spongiform encephalopathy (BSE) scandal (Speers and Lewis, 2004), but there was also adverse publicity over heart surgery in Bristol (Kennedy, 2001), the removal of organs from deceased children without parental permission in Liverpool (Redfern, 2001) and the tainted blood scandal in which haemophiliacs were infected with blood-borne diseases (Dyer, 2001). When Phillips questioned whether 'public health officials always place health above other concerns' in his report (Phillips, 1999), there were reasons why this might resonate with a British audience.

We can also place the author in context because he has remained an active vaccine sceptic and has maintained his presence on the World Wide Web. The page on the University of North Carolina (UNC) server has long gone. Yet his

personal site (Phillips, 2017) carries a curriculum vitae. We learn through this and the report itself that Phillips own child had become injured after receiving vaccination. He had worked at UNC as an IT technician, before studying law and becoming an attorney specializing in securing exemptions for parents with conscientious objections to vaccination. This helps to explain why the author was motivated to write and why he had the skills to write an official-sounding report and build a convincing argument. This made him similar to other charismatic campaigners for vaccination reform in the UK, such as Rosemary Fox and Jackie Fletcher, and helps historians to put these debates into a wider narrative of continuity and change over time.⁶ These transnational comparisons between Britain and the United States are fruitful for those trying to understand how lay scientific information spread across borders during the internet age. Thus, while the report is not a central part of the crisis in its own right, it becomes a jumping off point for asking further questions about the social and cultural history of vaccination. This is possible through using the documents retrieved in the Internet Archive, subjecting them to close reading and placing them in the context of other primary and secondary sources.

rmplc.co.uk

The final example is a useful reminder of how information can be lost. Web archives and search tools can be employed forensically to track down documents and information about events that might otherwise be obscured. Soon after Wakefield's press conference, a health worker named Rouse (1998)

wrote to *The Lancet* to question Wakefield's interests. He noted that 'a simple internet search ... quickly found the Society for the Autistically Handicapped', and that this site contained a report from lawyers building a case against the Department of Health that clearly showed Wakefield's involvement. This evidence appeared to show that funding for Wakefield's research had come partly through Legal Aid Board (later the Legal Services Commission) money which had been used to build the case on behalf of parents of autistic children. Brian Deer (2004) would later widely publicize such conflicts of interest, and they formed part of the judgement handed down by the General Medical Council (2010) that stripped Wakefield of his licence to practice. That this information seemed to be readily available in 1998 raises questions. If this was well known, why was it apparently ignored by the majority of the media criticizing government MMR policy? Similarly, while the medical press was quick to dismantle Wakefield's scientific claims (Chen and DeStefano, 1998), they had been mostly quiet about this and other potential interests (such as Wakefield's ownership of a patent on an alternative measles vaccine).

The URL that Rouse provided was not in the Wayback Machine. At the time of my study, searching was not possible – and even a subsequent search on the new interface did not produce any results. The domain – 'mplc.co.uk' – was owned by a web services company (e-crew, 2004). To see if this was an error, I searched 'The Society for the Autistically Handicapped' (in quotation marks) with the British Library's SHINE interface. The Society appeared to be British, and since the quoted URL was on the .uk top-level domain I hoped that the site

would be indexed. Limiting the results to 1999 (the earliest year with any results for the search string), returned the site. It was hosted on 'rmpic.co.uk'. A simple spelling mistake had left the site invisible. Without a search engine like SHINE, it would have remained so. The report (Society for the Autistically Handicapped, 2000) could only be found on a successor website on a different domain. Nonetheless, it bared out Rouse's claims. Written by lawyers known to have been involved in the case (including Richard Barr: Barr, 2002; Deer, 2004), Wakefield appears as one of the experts to whom parents are encouraged to listen. The lawyers openly claim to be working with Wakefield, citing his research and the court case.

This page is not crucial to the MMR story in itself, nor was it essential in the proceedings against Wakefield. Rouse's claims were subsequently made elsewhere in the printed and digital press, and there was enough evidence for Wakefield to be struck off the medical register. Yet, for social historians wishing to dig deeper into the ways in which voluntary organizations fought against the government, these sorts of pages are useful sources. This page – and presumably dozens like it – would have been lost without search tools. The use of printed URLs as a method of selecting documents is not sufficient in itself. Broken links may require further, manual searching before the cited information can be discovered.

Conclusions

This review of the MMR crisis presents a partial story. The use of printed URLs in other primary sources necessarily skewed which websites were discoverable and, in turn, which websites were included in this history of MMR. Inevitably, the views of the Department of Health received far more attention than those of other actors. As with any documentary history, evidence bases are biased towards those who had the power not just to create information, but those who have been able to maintain and archive that information for future scholars.

This survival bias is exacerbated with internet sources because of link rot and the archival practices of different organizations. Historians are acutely aware that information will be lost at the same time as so much more data is being stored than ever before (Rosenzweig, 2003). But we should not think that because documents from 'official' sources are more likely to survive that this guarantees access to them. Many of the materials from the General Medical Council, for example, are no longer available on the live web. Even for government agencies such as the Legal Services Commission, the press releases around MMR are not available through The National Archives' collection of government websites. Instead, they were found through the comprehensive online archive maintained by Brian Deer (2017).⁷ It is not difficult to see why this is problematic. While Deer has taken care to declare the provenance of his documents, the material he presents is undeniably biased towards his particular investigation into Wakefield. There is plenty of other material on MMR that will

not and cannot be included in such an archive, and so the research questions we can ask of it will be necessarily limited. We do not have extensive reactions from parents or other members of the public. Anti-government material (such as that written by Wakefield and his colleagues), is only included as it pertains to Deer's investigations. Without better archives with better discovery tools – both in terms of the digital technology and methodological techniques for storing and searching data – our histories will continue to skew towards those sources we find easiest to get our hands on (Hitchcock, 2013).

Out of the thousands of scholars who consider themselves historians, very few work with web archives. Historians are often conservative about how close to the present they can work and the value of 'historical distance'. In Britain, the end date for projects has usually coincided with the 'thirty-year rule' (referencing the fact that most official procedural documents are released in The National Archives thirty years after creation). The rise of Freedom of Information, digitized official reports and accessible web archives, however, is giving us much more material to work with from the near-past. Combine this with the passage of time, and it will not be long before there will be a sizable cohort of historians of 1990s and 2000s Britain. How will they make use of internet archives? Undoubtedly, my research was aided by my experiences with BUDDAH and attendance at conferences on web archiving. Yet this is the sum total of my 'training' on the subject; a product both of muddling through by getting my hands dirty with the material and making copious mistakes. Before I started with MMR, I was aware of the limits of what I would be able to read, of

what conclusions could be drawn from the way the archiving process works, and what sorts of questions would be answerable. This has resulted in a limited foray into the archive, but not an unsubstantial one. Without even this basic awareness, would other social or policy historians be able to access such material and use it in a productive way alongside their other sources? Are historians even aware that web archives are a potential trove of information? It could be that I am isolated in my particular networks, but conversations with colleagues in the field of contemporary British history suggests that there is an acute lack of awareness. As events around the turn of the millennium will become more and more relevant to historical inquiry, it is essential that those working with web archives pass on their experiences.

I am aware there are limits to what this project can say about the UK's MMR crisis. There is much more that could be done with the Internet Archive to shed light on other voices, especially in conjunction with deeper readings of other media and oral history techniques. As an adjunct to my main project, however, the archive has proved particularly fruitful. It helped me to answer my specific research questions on government policy. While I knew of the existence of MMR The Facts, it was only through reading and analysing the material contained within it that the Department of Health's educational tactics became more visible. For historians who still work with 'small' rather than 'big' data, Alan Phillips' and the Society for the Autistically Handicapped's pages give us

insights into how individuals and voluntary organizations embraced the new technology of the World Wide Web to communicate their positions. It will be up to future projects and historians to get the most out of this and the other material still waiting to be analysed in the archive. One potential criticism of close reading approaches to this material is that we may place too much emphasis on the documents that we can find at the expense of the wider picture.⁸ Again, this is where triangulation can help. While it is difficult to measure the precise audience or the impact that any one document had, the fact that these pages were referenced in leading medical journals gives us some indication that certain publics had begun to take notice. Further work with link analysis and linguistic analyses of larger corpora may be able to ask different questions of this material and give us wider insights into the crisis.

Notes

1. This work was conducted at the London School of Hygiene & Tropical Medicine through the *Placing the Public in Public Health* Wellcome Investigator award project led by Alex Mold (grant number WT-100586-Z-12-Z). This chapter was originally prepared as a paper for the RESAW conference at the University of London, held in July 2017. The author would like to thank all those who attended and provided valuable feedback.

2. Web archives often contain duplicates of the same document, or files with such small changes they are effectively the same. Similarly, archives can only collect what crawlers are able to access and store, meaning large sections of

the web have almost certainly not been catalogued. We have no way of telling what or how much. This is just the beginning. That said, even when these are well-curated they can cause significant problems that historians do not always confront. Research questions are often biased to what information is available and how easy it is to work with. As a result, Hitchcock (2013) worries that there may be an over-reliance on the criminal records of the Old Bailey in London, depriving us of important potential projects and conclusions about other parts of the United Kingdom.

3. For the latest version of this – which is now available online – see Public Health England (2013).

4. Although the document states that it was last revised in 1997, the first available copy through the Wayback Machine of the report on Phillips' archived site is from May 1999.

5. Phillips (2017) claims that the report was 'published around the world and translated into Russian, Chinese, and several European languages in the late 1990's [sic]. It has been used in medical school classrooms in three different countries, appears on websites around the world, and has appeared in publications including an Australian grassroots newsletter, Indian homeopathic journals, the Hindustan Times, and American and European magazines'.

6. Rosemary Fox (2006) led a campaign for changes in vaccination compensation law in Britain in the 1970s. Although not a professionally trained campaigner or academic, her daughter Helen had been diagnosed with brain

damage following a polio vaccination in the 1960s. Jackie Fletcher led a group called Justice Awareness and Basic Support (2001) during the MMR crisis, and campaigned for a court case against the Department of Health and more informed choice for parents. Her son had developed epilepsy after receiving MMR.

7. The Legal Services Commission (LSC) withdrew legal aid funding for the case against the Department of Health in October 2003. The first instance of the LSC's website in The National Archives is December 2003, and the press release is not accessible. Brian Deer holds a copy, which can be corroborated through the Wayback Machine (Legal Services Commission 2003; Legal Services Commission, 2004; Brian Deer 2017).

8. Although it would be simplistic to suggest that this is not an inherent problem with any source base. Selection is inevitable in any historical investigation, and subject to the biases of the researcher. It is only through being open about our methodologies that we can put historical claims into appropriate context.

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